Chapter 1 Introduction

1.1 Description and location of eastern Valle Vidal Unit

The Valle Vidal Unit is located in the Raton Basin, a geologic basin in New Mexico and Colorado that is becoming increasingly important in providing the nation with natural gas. The Valle Vidal Unit became a part of the National Forest System in 1982 through donation by Pennzoil Corporation. The donation included both the surface and oil and gas mineral estate (including coalbed methane) according to the Carson National Forest. Coal mineral rights are owned by Pittsburg & Midway Coal Mining Company (a division of Chevron). The eastern Valle Vidal Unit, the subject of study for this Reasonable Foreseeable Development Scenario (RFDS), encompasses an area of approximately 40,000 acres of the 100,000 total acres comprising the Valle Vidal Unit. The eastern Valle Vidal Unit includes all the land within the National Forest boundary east of a geologic feature called The Rock Wall as depicted in Figure 1.1. The privately owned Vermejo Park Ranch lies to the north, northeast, and south of the eastern Valle Vidal Unit. The Elliot Barker State Wildlife Area, and privately owned Philmont Scout Ranch and Ponil Ranch lie to the southeast and east.

The Valle Vidal Unit and adjacent properties are subdivided from the Maxwell Land Grant of 1841 (confirmed by the United States in 1887) that includes roughly three-fifths of Colfax County (Pettit, 1966). Landowners within the Maxwell Land Grant have established property boundaries using the metes-and-bounds survey method. There is no official governmental survey available for the land grant that subdivides it into townships based on the New Mexico principal meridian. A few maps in the public domain show township grids based on extrapolation from outside the land grant boundaries, but this is done roughly and inconsistently between maps.

Maps for this report include an unofficial land grid system created from two sources: an unofficial survey extrapolation of townships from the western edge of the land grid used by the National Forest Service, and an unofficial survey extrapolation of townships from the eastern edge of the land grant supplied by the New Mexico Oil Conservation Division that appears to be consistent with well locations on the Vermejo Park Ranch. In general, there is an approximate one mile adjustment at the boundary line between the two surveys, the boundary being the National Forest Boundary as provided by the Carson National Forest.

It is recommended that an official township-section grid survey be performed prior to any mineral leasing of the Valle Vidal Unit. The conclusions of the RFDS will not change significantly by a resurvey because this study is based on general areas of development rather than on specific well locations.

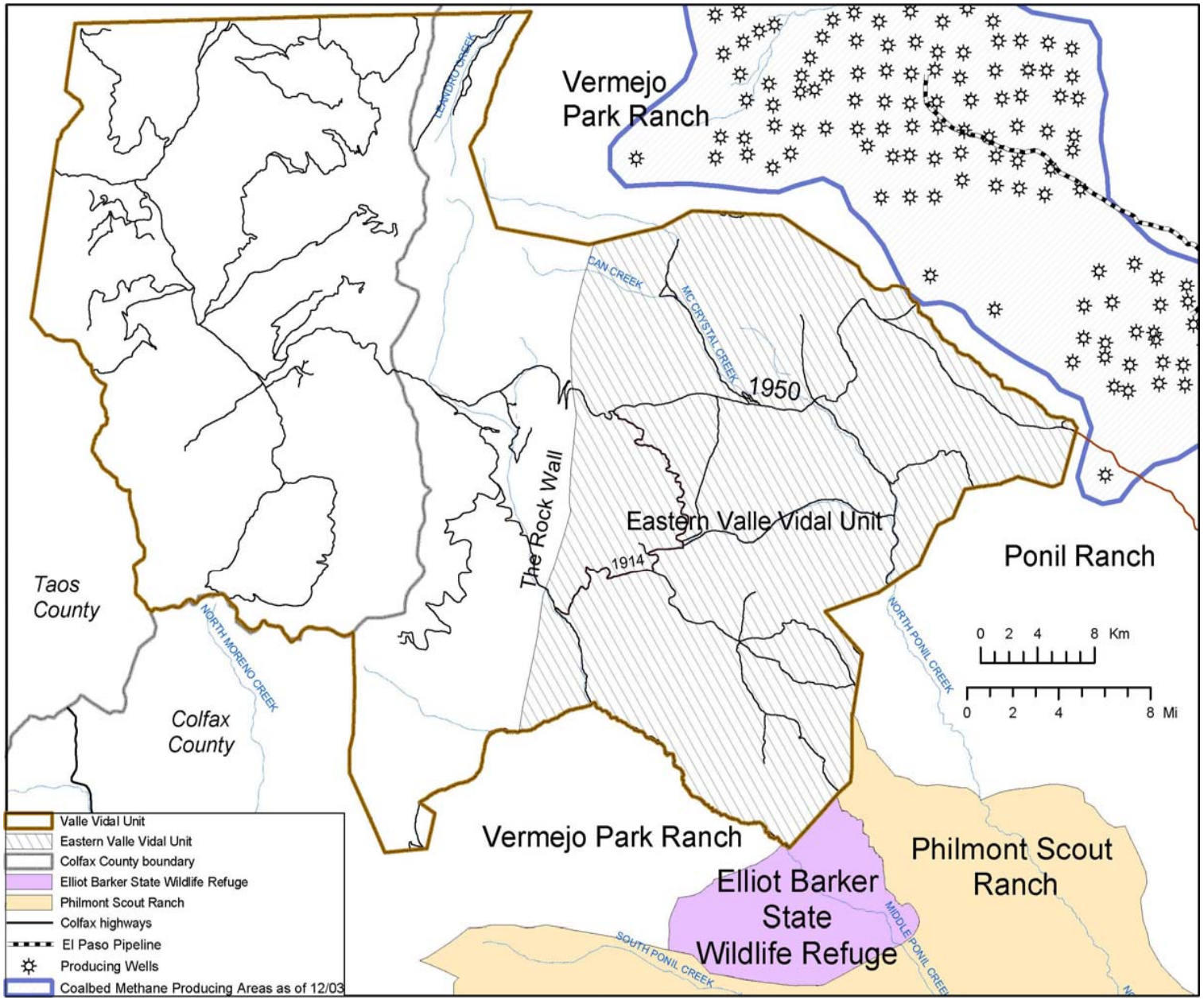

Figure 1.1 Index map showing the eastern Valle Vidal Unit, Carson National Forest and approximate boundaries with adjacent private and state owned lands in Colfax County, New Mexico. Map base reproduced from Carson National Forest (1999).

1.2 Purpose and scope of RFDS

The Valle Vidal Unit is currently being managed for multiple uses with special wildlife management emphasis. There are no oil and gas leases or producing wells on the Unit. Carson National Forest Resource Management Plan (1986) is silent in regards to the oil and gas resources. Presently, coalbed methane production operations are being conducted on the Vermejo Park Ranch, which lies adjacent to the eastern Valle Vidal Unit. The Carson National Forest contracted with the New Mexico Bureau of Geology and Mineral Resources to produce the Reasonable Foreseeable Development Scenario (RFDS) after the Forest received petroleum industry requests to make the Valle Vidal Unit available to leasing for similar activities.

The Reasonable Foreseeable Development Scenario (RFDS) provides a reasonable estimate of what oil and gas exploration and development activities *might* be proposed and/or conducted by a mineral lessee under current and reasonably foreseeable regulatory conditions. The RFDS, with an effective beginning date of June 1, 2004, is a 20-year forward-looking estimation of oil and gas exploration and development that is exclusive of other concerns that might compete for use of land in a multiple-use scenario. Subsequent to this report, the Carson National Forest may use the document to inform further analyses, which would consider the impacts of the activities described by the RFDS.

The approach taken by the RFDS team involves three steps:

1) Study and understand the geological factors for hydrocarbon generation, migration and accumulation. Predict potential for oil and gas reservoirs. Identify likely locations of reservoirs where possible.
2) Develop scenarios that describe the conditions and technology necessary to explore for, and access, the predicted oil and gas reservoirs. This step requires an estimation of how technology may evolve in a twenty-year time frame.
3) Estimate the type and amount of surface occupancy and disturbance required to develop the reservoirs.

There are currently no oil and gas related activities being conducted on the eastern Valle Vidal Unit. The RFDS is based in part on study of an adjacent producing property and prediction of geological conditions conducive to oil and gas resources at the Unit. The RFDS includes an analysis of production from nearby and similar coalbed methane fields as an example of what might be expected to occur at the Unit if geological conditions are similar. The RFDS and its authors cannot authorize or endorse oil and gas related activities on any property, nor does it warrant that any production will actually take place, or be economic within, the Unit should leases become available. Instead, it merely predicts what *might* occur if leasing and subsequent activity were allowed. The scope of work for the RFDS does not include evaluation of the various potential environmental impacts of predicted activity, of aquifer characteristics or impacts

thereon, or economic or social analysis of predicted activity, production and possible impacts thereon.